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## Two Holocene rock shelter deposits from the Knersvlakte, southern Namaqualand, South Africa

### Abstract

This paper describes the first excavations into two Holocene Later Stone Age (LSA) deposits in southern Namaqualand. The limestone shelters afforded excellent preservation, and the LSA sites contained material similar in many respects to shelters in the Cederberg range to the south. Deposition at both sites was discontinuous with a mid-Holocene pulse in Buzz Shelter followed by contact-period deposits over a total depth of some 0.45 m. In Reception Shelter the 1.40 m deposit yielded a basal age in the fifth to eighth centuries BC with pottery and domestic cow contained within a strong pulse of occupation just above this. The deposit then reflects another significant pulse in the terminal Holocene. A basal age of c. 24 000 BC suggests Pleistocene occupation of the area. Significant observations at both sites are that ostrich eggshell beads remain relatively small throughout, although those at Reception Shelter are somewhat larger, and that the typical prehistoric signature continued right through the contact period. Artefacts ascribed to a late Holocene industry so far only recognised on coastal sites were also found. KEY WORDS: Holocene, Namaqualand, Later Stone Age, bedding and ash, contact period, stone artefacts, beads, organic artefacts.

### Disciplines

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## Two Holocene rock shelter deposits from the Knersvlakte, southern Namaqualand, South Africa

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### ABSTRACT

This paper describes the first excavations into two Holocene Later Stone Age (LSA) deposits in southern Namaqualand. The limestone shelters afforded excellent preservation, and the LSA sites contained material similar in many respects to shelters in the Cederberg range to the south. Deposition at both sites was discontinuous with a mid-Holocene pulse in Buzz Shelter followed by contact-period deposits over a total depth of some 0.45 m. In Reception Shelter the 1.40 m deposit yielded a basal age in the fifth to eighth centuries BC with pottery and domestic cow contained within a strong pulse of occupation just above this. The deposit then reflects another significant pulse in the terminal Holocene. A basal age of c. 24 000 BC suggests Pleistocene occupation of the area. Significant observations at both sites are that ostrich eggshell beads remain relatively small throughout, although those at Reception Shelter are somewhat larger, and that the typical prehistoric signature continued right through the contact period. Artefacts ascribed to a late Holocene industry so far only recognised on coastal sites were also found.

**KEY WORDS:** Holocene, Namaqualand, Later Stone Age, bedding and ash, contact period, stone artefacts, beads, organic artefacts.

Recent excavations on the Knersvlakte in southern Namaqualand aimed to test three rock shelters for Middle Stone Age (MSA) deposits. Despite MSA artefacts on their talus slopes, two shelters provided only well-stratified, intact Later Stone Age (LSA) occupation layers typical of similar shelters elsewhere in the Western Cape. The third, a seemingly collapsed shelter, yielded only scattered LSA materials in poor context close to the surface, but these overlay deep MSA deposits. This paper presents an analysis and interpretation of the LSA material from the two stratified LSA sites, Reception Shelter (Varsche Rivier (VR) 001) and Buzz Shelter (VR005), while the MSA site (VR003) will be reported elsewhere. Research at all three is ongoing.

Two major research projects have been conducted in Namaqualand, in its central and northern parts (Webley 1992a, b; Dewar 2008). In addition, the Archaeology Contracts Office at the University of Cape Town has sampled numerous sites in the coastal diamond and heavy mineral mines but academic publication has thus far focused on the north. This paper contributes to that archive. Intact, well-preserved rock shelter deposits are rare in Namaqualand (Webley 1992b) and the sites described here offer excellent opportunities to examine the regional mid- to late Holocene sequence. The region is important to the study of early pastoralism, since the west coast is one of the proposed routes of entry into South Africa (Ehret 1982; Elphick 1985; Smith 1992, 2008; Bousman 1998) and the earliest directly dated sheep bone comes from Spoeg River Cave in this region (Sealy & Yates 1994).

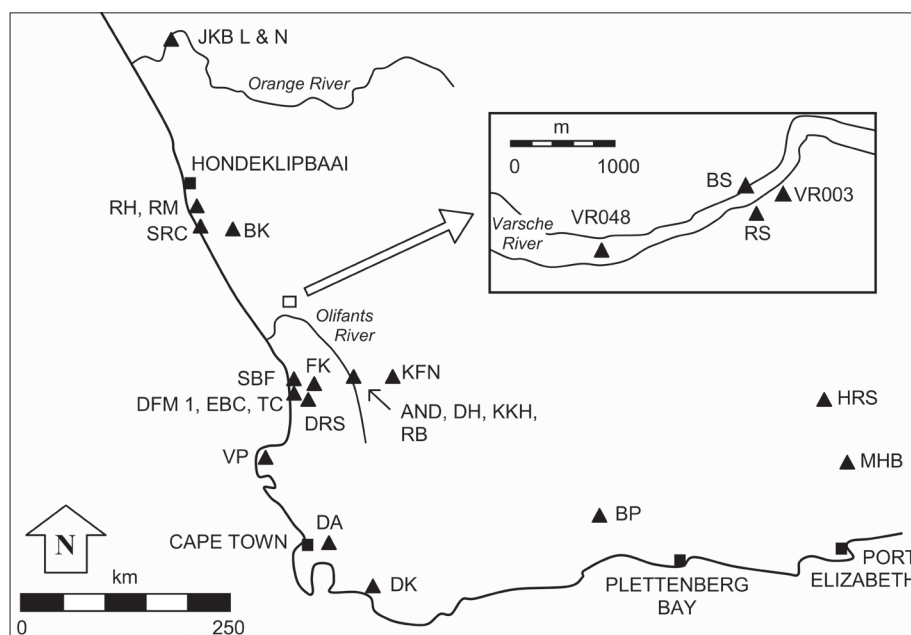


Fig. 1. Location of sites mentioned in the text (AND: Andriesgrond, BK: Bethelsklip, BP: Boomplaas, BS: Buzz Shelter, DH: De Hangen, DA: Delta, DK: Die Kelders, DRS: Diepkloof Rock Shelter, DFM1: Dunefield Midden 1, EBC: Elands Bay Cave, FK: Faraoskop, HRS: Highlands Rock Shelter, JKB L: Jakkalsberg L, JKB N: Jakkalsberg N, KKH: Klein Kliphuis, KFN: Klipfonteinrand, MHB: Melkhoutboom, RB: Renbaan, RH: Rooiwal Hollow, RM: Rooiwal Midden, RS: Reception Shelter, SBF: Steenbokfontein Cave, TC: Tortoise Cave, SRC: Spoeck River Cave, VP: Vredenberg Peninsula sites, VR003, VR048).

#### ENVIRONMENT, LOCATION AND CONTEXT

The sites are on the farm Varsche Rivier 260 in the south-western Knersvlakte, Namaqualand, 43 km from the coast (Fig. 1). They occur along coarse-grained, quartz-rich limestone cliffs cut by the non-perennial Varsche River. The area is arid with a mean annual rainfall of  $\leq 150$  mm (Cowling et al. 1999), most of this falling in winter on the mountains to the east (Desmet 2007). The Varsche River mainly flows in response to heavy winter showers over the escarpment, although summer thunder showers from the eastern (summer rainfall) part of the country can occasionally penetrate far enough to cause a brief summer flow. In summer, standing pools last only a few weeks but in winter they occur for longer. When flowing, the river primarily occupies a channel deeply incised into the silts but can sometimes inundate the entire floodplain which, between the sites, is some 170 m wide. Water is obtainable year round in parts of the Hol River several kilometres to the west of our research area. Several springs occur in that area but the water is sulphurous and very poor in quality (B. Chase pers. comm. 2010). The local vegetation consists of Knersvlakte Quartz Vygieveld, which comprises dwarf succulent shrubs growing on extensive quartz-gravel plains. Just south of the Varsche River is a large tract of Namaqualand Spinescent Grassland consisting of both succulent and non-succulent shrubs but dominated by the spiny grass *Cladoraphis spinosa* (Mucina et al. 2006). Historically, the

vegetation of Namaqualand could not support many large-bodied mammals, and so small species, including small and medium bovids, were most common. Steenbok and ostrich were most widespread; springbok, gemsbok and red hartebeest were found in areas where more grazing was available, while klipspringer, grey duiker and mountain zebra were found in the uplands in the east and black rhinoceros frequented the coastal plains (Cowling & Pierce 1999: 103–4). A diversity of both large and small carnivores, including lion, leopard, caracal, black-backed jackal, and brown hyena, frequented the area. Smaller animals included hares, mole rats, hyraxes and a variety of tortoises.

Reception Shelter (S 31° 31' 33.6", E 18° 36' 04.0") lies at the southwestern end of the limestone outcrop near the top of the cliff line on the south bank of the river. The site is a small, enclosed shelter of approximately 4 m by 7 m with one end closed by an informal tumbled stone wall probably built during the last few hundred years (Fig. 2). A small southwest-facing entrance leads over a rock shelf 0.30 m higher than the deposit surface. The horizontal ceiling is 1.30 m above the deposit.

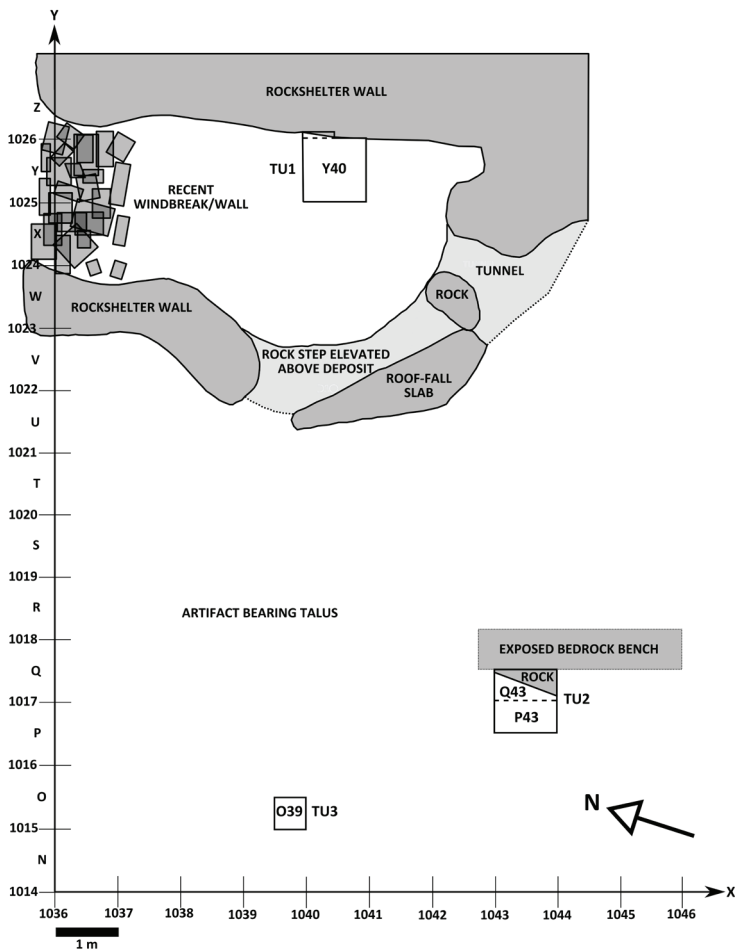


Fig. 2. Floor plan of Reception Shelter.

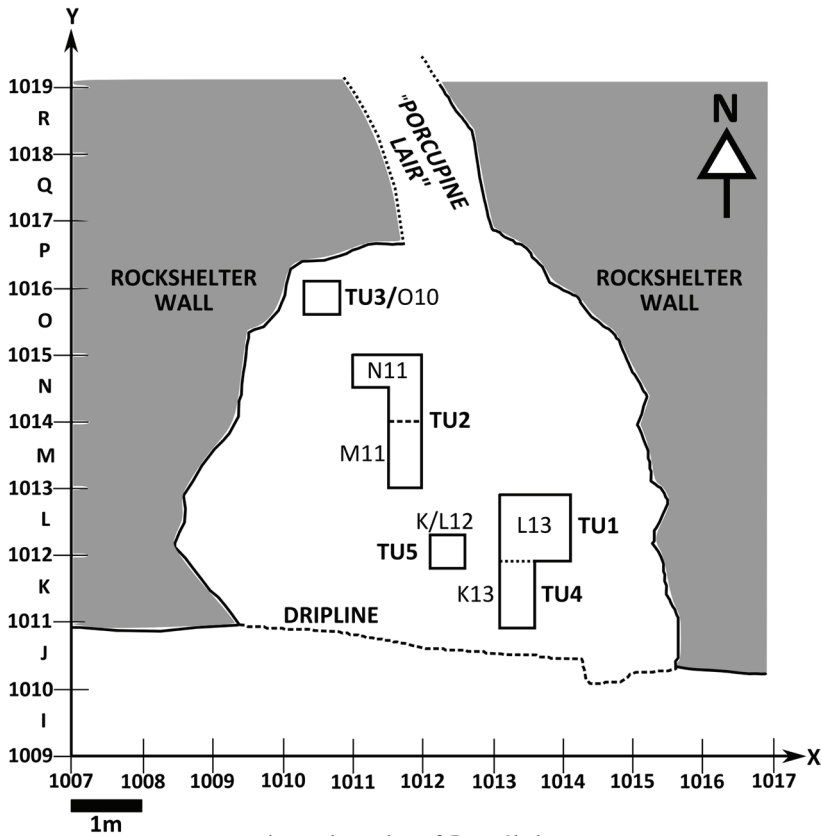


Fig. 3. Floor plan of Buzz Shelter.

talus slope extends some 40 m to the west of the mouth. Recent bones and sheep or goat dung cover the floor, as well as occasional MSA elements, while the talus was covered with thousands of stone artefacts, and ostrich eggshell fragments.

Buzz Shelter (S 31° 31' 27.8", E 18° 36' 13.8") lies in a small side valley on the north bank of the Varsche River and faces due south. It is 270 m north of Reception Shelter. The shelter is formed beneath a thin band of relatively more resistant rock which seems to have been cut back progressively as a result of the small stream that occasionally flows over its lip. Its current floor space is triangular in plan, measuring approximately 7 m across the drip line and 7 m deep (Fig. 3). Due to the angle of the deposit, the horizontal ceiling varies from 1.8 m high at the drip-line to less than 1 m at the back. A porcupine lair occupies a deep recess at the very back of the site and a crack in the roof has resulted in a section of deposit washing out near the eastern edge of the shelter. While LSA material littered the drip-line region, the floor inside was covered with modern sheep or goat dung. The talus showed evidence of MSA artefacts.

With no excavations having been conducted in this area in the past, the local archaeological context is poorly known but various ground surveys have yielded extensive artefact scatters, primarily associated with rivers. The Varsche River has

cut through massive cobble beds laid down during a far earlier period. The cobbles provide a ready source of stone for flaking, as testified by the artefacts commonly found on them. They include fine-grained quartzite, silcrete and various other rocks. Just two older LSA assemblages of late Pleistocene and probable early Holocene age have been reported (Webley 2002; Orton 2008a), while mid- to late Holocene shell middens are abundant at the coast (Halkett 2003; Orton & Halkett 2005, 2006; Orton et al. 2005; Halkett & Dewar 2007; Dewar 2008).

#### EXCAVATIONS AND DATING

At Reception Shelter (Fig. 2), the 1 m<sup>2</sup> Test Unit (TU) 1 was excavated against the rear wall, opposite the entrance. Although a step in the wall soon reduced the area of the excavation, the intact late Holocene stratigraphy continued until a sterile, natural clay-like fill was reached at approximately 1.40 m depth (Fig. 4). Natural strata were followed as closely as possible. The base was angling away from the wall, suggesting that even greater depth might be attained towards the centre of the shelter. The upper fill was composed of bedding and ash layers, followed by several episodes of either very limited or non-occupation. A rich LSA deposit occurred at the base. No evidence of remnant older deposits was found and the basal layer is sufficiently far below the roof (2.75 m) to make the removal of earlier deposits by more recent LSA occupants unlikely. The excavated levels have been grouped by appearance and content into larger layers for easier presentation (Table 1). Two radiocarbon dates

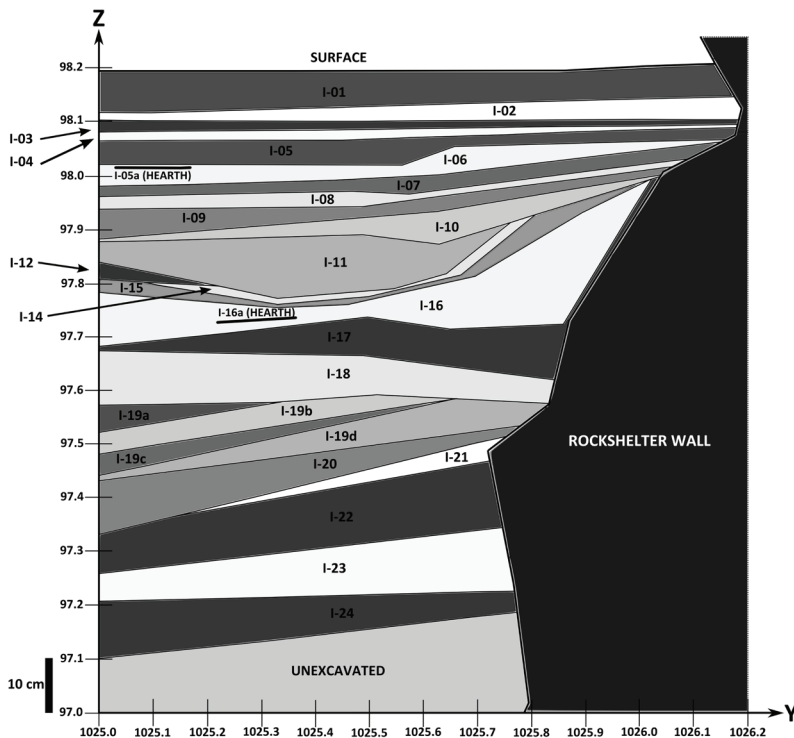


Fig. 4. Stratigraphy in Reception Shelter TU1: north section facing north.

have been obtained from this sequence on tortoise carapace (Table 2). While the uppermost layers (1 to 3) produced historical material indicating an age within the colonial period, an early thirteenth-century AD age was obtained from the top of Layer 6 and a fifth- to eighth-century BC age from the very base of Layer 9, just above the sterile deposits. Pottery occurs in the upper part of Layer 9, suggesting an age of less than 2000 years there.

TU2, also 1 m<sup>2</sup>, was excavated just outside the mouth of the shelter and revealed a poorly differentiated, soil-rich deposit with numerous rocks. This excavation proceeded to a 1.05 m depth, at which point the many rocks made further work impossible. Six levels were distinguished on the basis of soil colour and textural changes (Fig. 5). The six levels are presented individually below. Two radiocarbon dates were obtained on ostrich eggshell fragments (Table 2). The upper one came from Level 1 some 0.05 m below the surface and indicated a corrected and calibrated age of younger than AD 1220. A sample from Level 6, 1.05 m below the surface, returned a late Pleistocene age of  $24\,018 \pm 594$  b.c. While this clearly does not date the bulk of the associated archaeology, it may indicate that humans were present around the site at that time. A third excavation, TU3 (0.25 m<sup>2</sup>), was commenced but not excavated below the surface level. Its finds are not described in any detail.

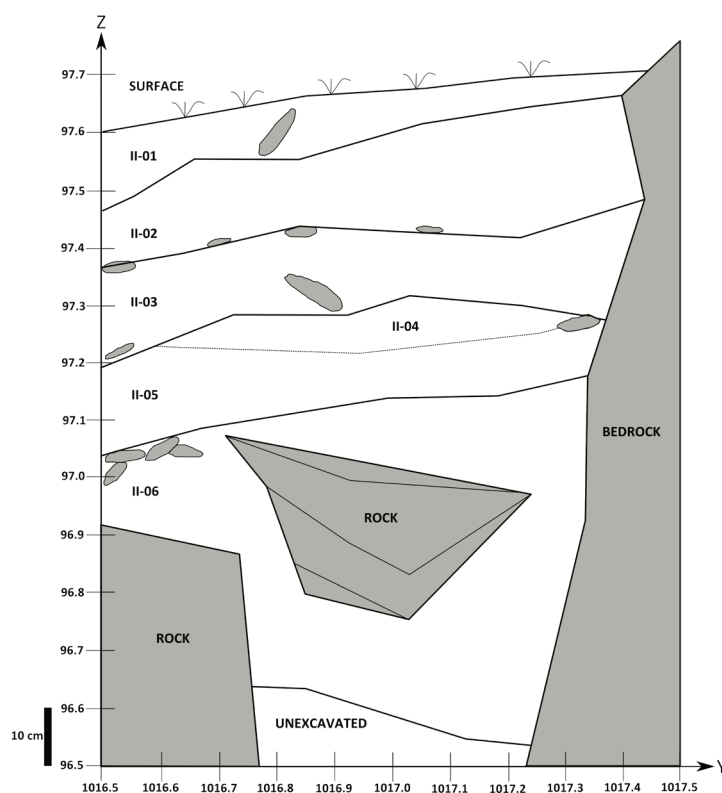


Fig. 5. Stratigraphy in Reception Shelter TU2: north section facing north.



TABLE 1  
Stratigraphic groupings in Reception Shelter TU1.

Analytical Layers	Excavation Levels	Description
1	1, 2	Primarily compact dung but with some grass included.
2	3, 4	Compact and includes tiny spalls against cave wall but otherwise softer deposits with ash and some vegetation in lower parts.
3	5	A grass bedding layer that thickens away from the cave wall and includes a hearth in a small pit.
4	6, 7, 8	Top is compact with minimal vegetation near cave wall but becomes a bedding layer towards the west. This overlies a bedding layer with an ashy deposit below.
5	9, 10, 11, 12, 13, 14	Fine ashy deposit overlying a thick bedding unit. Beneath the bedding is an ashy lens that extends westwards and a dark, organic layer.
6	15, 16, 17	Pale, gritty deposits in the north but decomposing bedding hollow developing to the south. These overlie a gritty deposit with silty patches. Gravelly towards cave wall.
7	18, 19A-D	Alternating bands of silty and gravelly deposits that begin to develop a slope downhill towards the west. Micromammal bones abundant in lower levels.
8	20, 21, 22, 23	Soft, smooth deposit with occasional spalls, gravelly along the cave wall. Land-snail shells increase dramatically in abundance towards the base.
9	24, 25	Soft deposit with some rocks. Base angles steeply downhill towards the west.
10	26	White, chalky sterile deposit with green patches that appears to extend to the base of the shelter.

TABLE 2

Radiocarbon dates from Reception and Buzz Shelters. Holocene dates are calibrated on OxCal (Bronk-Ramsey 1995, 2009) and the Pleistocene date on CalPal (Danzeglocke et al. 2009).

Lab #	Provenience	Material	C14 age	Calibrated age (2 sigma)
AA899909	Reception Shelter X40 NW L15a (TU1)	Tortoise carapace	828±44 b.p.	AD 1177–1293
AA89910	Reception Shelter Y40 SW L25 (TU1)	Tortoise carapace	2560±49 b.p.	793–416 BC
AA89907	Reception Shelter P43 NW Level 1 (5 cm below surface; TU2)	Ostrich eggshell	679±44 b.p.*	AD 1220–1951
AA89908	Reception Shelter Q43 SW Level 6 (105 cm below surface; TU2)	Ostrich eggshell	21 900±120 b.p.*	24 780–27 156 BP
AA89911	Buzz Shelter M11 NE/NW L9a (TU2)	Bone shaft fragment	4551±54 b.p.	3366–2945 BC
AA89912	Buzz Shelter M11 SE/SW L15c (TU2)	Bone shaft fragment	5452±54 b.p.	4347–4053 BC

\* Following Vogel et al. (2001) 180 ± 120 years subtracted from radiocarbon age prior to calibration to produce 499 ± 164 b.p. and 21 720 ± 240 b.p.

At Buzz Shelter we conducted test excavations in three parts of the site (Fig. 3). Firstly, we tackled the heavily eroded area, cleaning out the reworked deposits to see what lay beneath (TU1). Only tiny remnants of intact deposit were encountered with most seemingly altered and churned by the action of dripping water. An extension southwards towards the drip line comprised TU4 and revealed similar material. A deep sounding just outside the eroded area (TU5) revealed soil-rich deposits with little or no apparent stratigraphy. For analytical purposes, a single sequence based on field observations has been created to include the material from all three holes.

TU2 (1.25 m<sup>2</sup>) in the centre of the shelter revealed 0.45 m of intact late Holocene deposits in two major, and temporally disparate, components (Fig. 6, Table 3). The older component is very ashy and slopes downhill into the shelter. It appears to have been truncated towards the mouth, suggesting that during this early phase the main focus of occupation was further towards the mouth of the shelter. We suspect, therefore, that the lip, which is very thin, has receded with time, resulting in the exposure and erosion of deposits. Two radiocarbon dates were obtained for the uppermost and lowermost levels of these older deposits. They reveal a pulse of occupation dating between 4200 BC and 3200 BC, which is in turn overlain by far more recent material. These older deposits were cut by the later occupants and presumably discarded outside owing to lack of space inside, reminiscent of the situation at Tortoise Cave to the south at Elands Bay (Robey 1987). The cutting was filled by horizontally bedded, typical late Holocene bedding and ash layers right down to bedrock. Historical material comes from the upper two layers only, while a wad of grass trapped on bedrock beneath a roof fall looks very fresh and suggests that all the overlying material is quite young.

TU3 targeted an area along the west wall of the shelter in the hope of capturing any remnant MSA deposit that might remain should a major flushing event have occurred in the past. This yielded only late Holocene material, but due to the difficulties posed

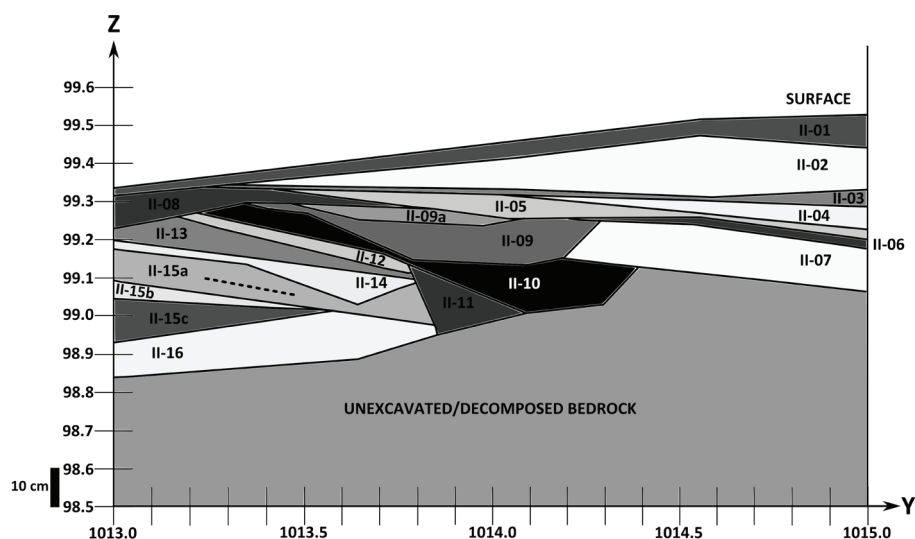


Fig. 6. Stratigraphy in Buzz Shelter TU2: east section facing west.

TABLE 3  
Stratigraphic groupings in Buzz Shelter TU2.

Analytical layers	Excavation levels	Description
1	1, 2	Compacted layers of crusty dung with round droppings more noticeable lower down.
2	3	Many woody twigs with numerous round droppings in some areas.
3	8, 4, 5	Ashy layer of bedding grass with ochre stringer at the base. Ash more pronounced in some areas and grass in others. Many tiny roof spalls.
4	6, 7, 9, 10, 11	Grass bedding with ash near the top. Comes down onto near sterile deposits overlying bedrock. These deposits occupy a pit excavated to bedrock in the rear part of the cave.
5	12, 13	Compact, ashy layer with fragments of decomposed bedding grass. Angles downwards towards the north.
6	14, 15	Fine, powdery, ash-rich deposit forming a wedge such that the base is approximately horizontal.
7	16	Dark, mottled, relatively sterile deposit overlying bedrock.

by the stratigraphy pinching out against the shelving bedrock, this shallow excavation was soon abandoned. As far as was possible, all excavation proceeded following natural stratigraphy.

#### RECEPTION SHELTER

##### *Stone artefacts*

The frequency of stone artefacts in the two excavations was remarkably different. Altogether 3 806 flaked artefacts were recovered from TU2, while just 319 came from TU1 (Table 4). Quartz dominated both collections but was even more strongly represented in the TU2 deposits, particularly at the base (Figs 7 & 8). A number of calcite crystals were encountered throughout TU2 but just one, at the base of Layer 5, came from TU1. This mineral is too soft to flake (hardness 3) and must have been collected for another reason.

The numbers in TU1 are generally too low to interpret, but the three crystal quartz backed artefacts in Layers 5 and 6 and those in TU2 recall the industry documented at Rooiwal Hollow and Rooiwal Midden and other places further north on the Namaqualand coast (Orton et al. 2005; Dewar 2008) and at Dunefield Midden 1 near Elands Bay (Orton 2002, 2006). Unfortunately, the degree of breakage meant that only two backed tools could be measured, one from each excavation: a backed point from TU2 Level 1 measures 13.64 mm, while a backed bladelet from TU1 Layer 5 is 12.31 mm long. These figures compare favourably with mean measurements from both Dunefield Midden 1 ( $14.47 \pm 3.11$  mm,  $n = 46$ ; Orton 2002) and a Namaqualand coastal sample ( $13.68 \pm 3.59$  mm,  $n = 38$ ; Orton unpubl. data).

When compared to other west coast analyses, the incidence of backed scrapers in Levels 2 and 3 of TU2 (Fig. 9) suggests the inclusion of material in excess of about 2 500 years old (Orton 2006; Dewar 2008; Sadr & Gribble 2010). Although adzes are typically associated with late Holocene rock shelter deposits in the Western Cape, none were found in the TU1 excavation. The miscellaneous retouched piece (MRP) in TU1 Layer 1, however, was adze-like. In contrast, four adzes came from

TABLE 4  
Reception Shelter stone artefacts. (\* denotes one crystal quartz retouched item.)

		TU1 layers								TU2 layers							
		1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	
Quartz	Bipolar core					4	1				14	4	10	3	4	24	
	Single-platform core										1		1			2	
	Irregular core					3					5		3		1	2	
	Scraper fragment															1	
	Backed point										1*		1*				
	Backed point fragment										1*						
	Curve-backed point						1*						1*				
	Backed bladelet					2*											
	Backed bladelet fragment										1*				1*		
	Curve-backed flake										1*						
	Triangle												1				
	Backed piece fragment										2*					1	
	Adze														1		
	MRP	1												2			
	Edge-damaged bipolar													1			
	Edge-damaged bladelet						1					1	1	1			
Edge-damaged flake				1	1	1	1				9	3	9		4	10	
Edge-damaged chunk		1											3				
Edge-damaged chip											1				1	2	
Blade											1	1	1		1	1	
Bladelet						5	1	1		1	28	9	17	1	8	15	
Flake	8	4	1	9	51	12	4	4	8	3	250	91	28	27	89	303	
Chunk		2	2	2	13	4	1	1	3	1	83	17	52	7	28	99	
Chip	5	7		10	48	7	2	2	7	1	411	170	182	12	180	767	



TABLE 4 (*continued*)  
 Reception Shelter stone artefacts. (FGBR = fine-grained black rock.)

	TU1 layers									TU2 layers					
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6
Quartzite	Single-platform core									1	1				
	Edge-damaged flake					1									
	MRP/grindstone fragment											1			
	Blade									1		2		1	1
	Bladelet		1							1					1
	Flake	2		1	12	4				49	6	13	1	2	17
	Chunk					1				4		2		1	2
	Chip									4		3			5
FGBR	MRP					1					1				
	Edge-damaged flake														1
	Flake				4	3				26	6	5		3	8
	Chunk									8	2	1			2
	Chip									3		5			3
Calcrete	Irregular core									1					
Other	Edge-damaged flake									1					
	Edge-damaged chunk													1	
	Blade									1					
	Flake				1	1			1	24	5	12	1	1	3
	Chunk					1				10	1	2		1	1
	Chip				1					2					

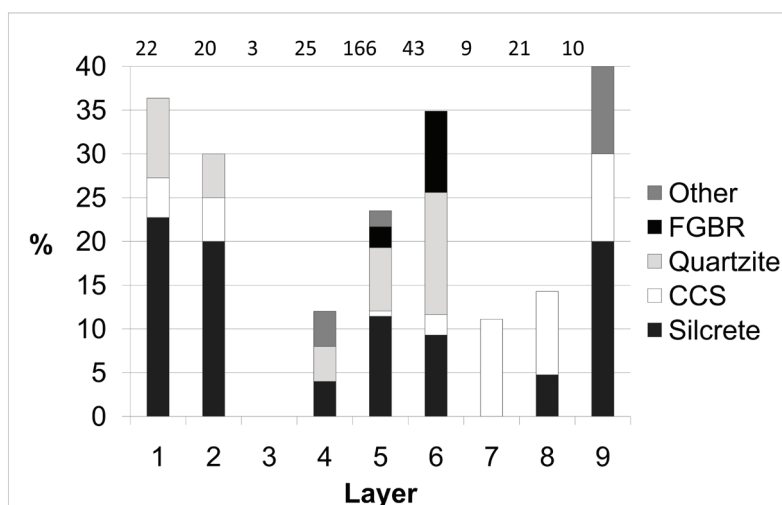


Fig. 7. Stone materials in Reception Shelter TU1. Quartz is excluded and comprises the remaining amount in each layer. Number of artefacts per layer is indicated along the upper margin.

the TU2 deposits outside the cave. Although TU3 data are not presented, a single cryptocrystalline silica (CCS) adze was found on the surface; it is the only one in the typical 'slug' shape often reported. Pot-lid fractures provide limited indications of heating of CCS, whether deliberate or not, in Levels 3 and 5 of TU2.

Non-flaked artefacts were rare in both excavations. One lower grindstone fragment in limestone came from TU1 Layer 5, while in TU2 there were two quartzite grindstone fragments in Level 3. One was further used, and seemingly retouched, in a manner suggestive of scraping but its edge was far too irregular for it to be considered a formal scraper (Fig. 9F). Also not quantified here are small fragments of ochre whose

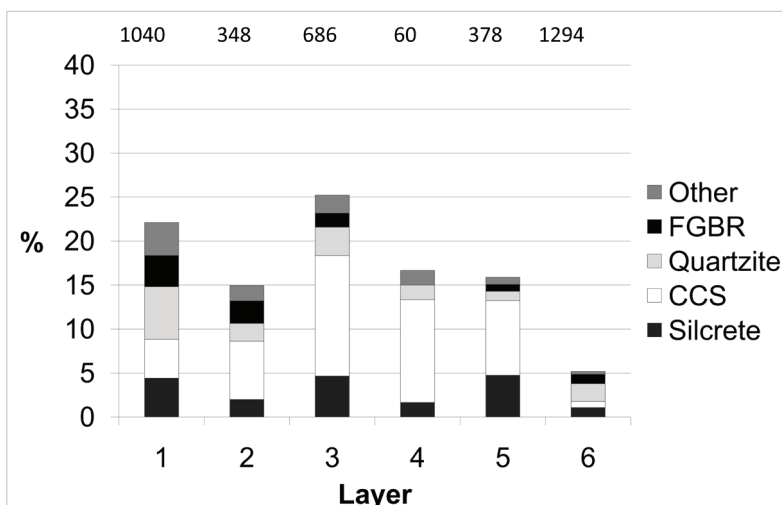


Fig. 8. Stone materials in Reception Shelter TU2. Quartz is excluded and comprises the remaining amount in each layer. Number of artefacts per layer is indicated along the upper margin.

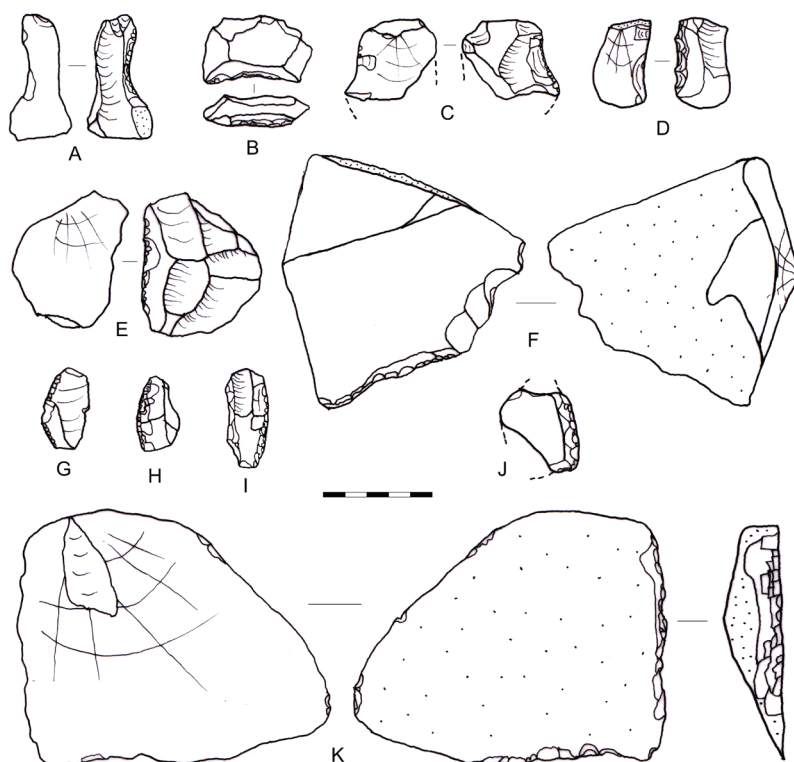


Fig. 9. Stone artefacts from Reception Shelter. Scale bar = 25 mm. A: CCS adze (TU3, Level 1), B: CCA adze (TU2, Level 2), C: CCA adze (TU2, Level 2), D: CCA adze (TU2, Level 3), E: quartz adze (TU2, Level 5), F: quartzite MRP (stippling denotes cortex which is also ground, TU2, Level 3), G: silcrete MRP (TU2, Level 1), H: CCS side scraper (TU2, Level 3), I: CCS backed scraper (TU2, Level 2), J: quartz scraper fragment (TU2, Level 6), K: fine-grained black rock MRP (TU1, Level 7).

origin is uncertain. They were sparse in TU1 but common throughout TU2. Various other manuports and/or natural rock fragments, usually quite small, were distributed throughout both excavations.

#### *Ostrich eggshell beads*

Ostrich eggshell (OES) beads were distributed throughout the deposits of TU2 but were only in the pre-contact layers of TU1. Figure 10 shows the distribution of external and aperture diameters from TU1. Layer 5 ( $n = 9$ ) on average has larger beads than Layer 9 ( $n = 16$ ), but unfortunately the overall bead numbers in the other layers are too small to make further detailed assessment of change meaningful. In Layer 9 all the beads came from Level 24 and, since 15 of the 16 beads came from one bucket of deposit, it seems likely that they originated from a single item of jewellery or clothing. Eleven of these beads in particular are very tightly clustered on Figure 10. The mean thickness of the beads from Layer 9 is  $1.57 \pm 0.12$  mm, while that of unmodified OES fragments is  $1.94 \pm 0.13$  mm. The far thinner beads are highly worn from use, and the low standard deviation, even lower than that of the unmodified fragments, shows that they were most likely lost at the same stage of wear and most



were probably made from the same eggshell. No bead-manufacturing debris was found in TU1.

The difference in both external and aperture diameters between the TU1 and TU2 beads is clear from Figures 10 and 11. This supports the generally older age of the deposits outside the cave, although change through time is again not obviously evident within the TU2 deposits. Three manufacturing fragments were recovered, two in Stage IIb and one in Stage IIIb (following Orton 2008b). Although so few are present, the lack of unbroken, unfinished beads suggests on-site manufacture rather than importation of partly-made beads. One Stage IIb bead has a ring around the drill hole, indicating the use of an irregular-shaped flake in the drilling (Fig. 12). One broken whole bead was also present, but, being approximately two-thirds preserved, this was included and measured with the whole beads. While most of the TU2 beads have been worn quite thin, those from Level 5 are thicker, perhaps indicating that they belonged largely to a single item that was lost or broken when quite new. Just two beads were found on the surface of TU3. Both fit comfortably within the range of the TU2 beads. Six other beads ranging in external diameter from 4.34 mm to 7.65 mm were measured and left on the talus slope with all but the smallest being found within 7 m of the shelter mouth. The size range supports a mixture of beads of varying age on the talus slope.

### *Pottery*

A small collection of pottery was obtained from each excavation. TU1 produced ten sherds: one from Layer 4, seven from Layer 5 (two of these refit) and two from Layer 9. In TU2 there were nine sherds, six from Level 1, one from Level 2 and two from Level 3. The latter two refit and appear to have broken post-excavation.

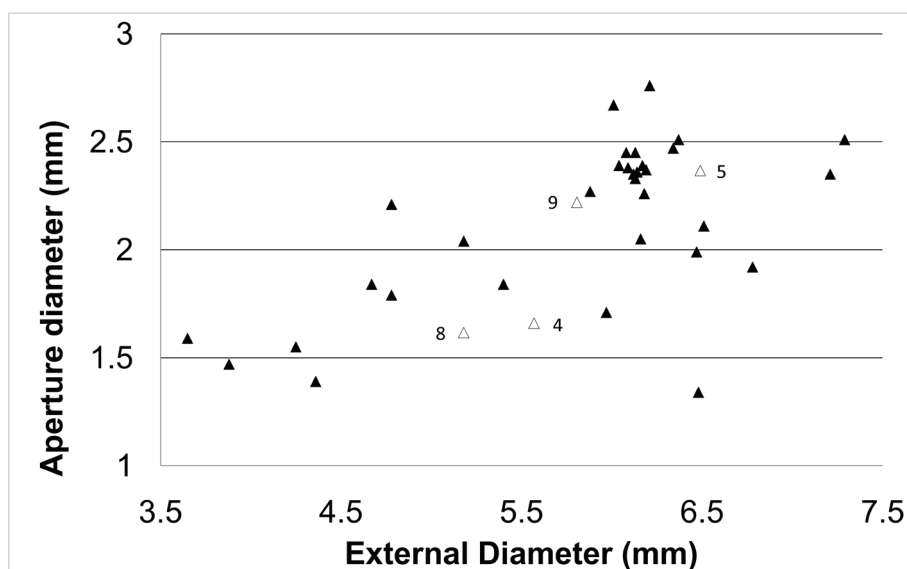


Fig. 10. Ostrich eggshell bead dimensions from Reception Shelter TU1. Solid triangles represent individual beads. Open numbered triangles indicate mean values. Layer 4 has two beads, Layer 8 has three and the rest have nine or more.

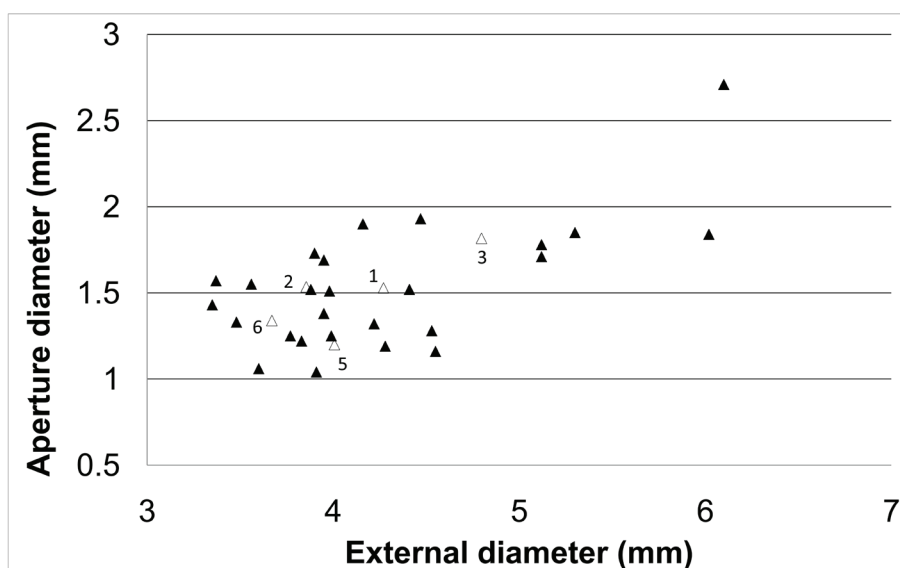


Fig. 11. Ostrich eggshell bead dimensions from Reception Shelter TU2. Solid triangles represent individual beads. Open numbered triangles indicate mean values. Layer 2 has four beads, Layer 6 has two and the rest have five or more.

The maximum and minimum thicknesses for each sherd were measured, and then averaged. The mean and standard deviation thus calculated for all sherds from TU1 is  $7.14 \pm 1.83$  mm and from TU2 is  $6.74 \pm 0.84$  mm. Too few sherds were recovered to assess change through time. The higher degree of variation in TU1 is the result of three sherds from Layer 5 with mean thicknesses in excess of 9 mm; the rest are all less than 7 mm. In TU2 no individual sherds averaged more than 8 mm. Eight



Fig. 12. Stage IIB bead with drilling scars from Reception Shelter TU2, Level 5. Scale bar = 5 mm.



Fig. 13. Decorated pottery and rim sherds from the talus slope at Reception Shelter. Scale bar = 5 cm.

sherds, four from the surface of TU3 and four collected from the area around the cave mouth, returned a mean thickness of  $6.26 \pm 1.13$  mm while 15 single measurements from sherds elsewhere on the talus slope returned a mean of  $6.53 \pm 0.66$  mm. All of these values are within the expected range of variation for LSA pottery (Rudner 1968).

One sherd from TU1, Layer 5, shows evidence of coil manufacture, while others from both excavations have traces of smoothing and burnishing on their surfaces. The TU1 sherds are all dark brown to black in colour, while those from TU2 vary, presumably due to the effects of weathering. All were tempered with quartz, but occasional inclusions of mica, feldspar and other minerals were noted. No rims or decorated sherds came from TU1 or TU2 but one sherd in the former had post-firing scratches on its outer surface. One everted rim sherd with incised parallel lines and a red ochre slip was found on the TU3 surface (Fig. 13), while four other diagnostic sherds were collected from the cave surrounds. They include two refitting neck or shoulder sherds with impressed cross-hatched decoration from above the cave, a plain tapered and flared rim and a red-slipped body sherd with decoration that is done by means of dragging a comb. Other sherds seen on the surface during excavation but not collected include one with a row of impressed dots (Fig. 13). No lugs, bosses or spouts were seen.

#### *Marine shell*

The Atlantic Ocean is currently 43 km west of the Varsche Rivier sites. Marine shellfish are perhaps unlikely to have been carried this far inland as food, but numerous fragments were found; however, none gave any clue as to their function.

TU1 contained eleven fragments weighing 32.8 g. Most were in Layer 5, while three were in Layer 6 and one in Layer 8. The species included granite limpet (*Cymbula granatina*), black mussel (*Choromytilus meridionalis*), possibly the otter shell *Lutraria* sp. and an indeterminate whelk. Included amongst these was a whole *Choromytilus meridionalis* valve that was found sitting on the ledge below the cave wall and was included within Layer 6 of the excavation. TU2 contained 19 shell fragments weighing 19.7 g. They were present in all levels but were most frequent in Level 3. The species identified were as for TU1 but with the addition of granular limpets (*Scutellastra granularis*).

### *Organic artefacts*

Artefacts made from organic materials were recovered only from TU1. Two wood shavings came from Layer 3. A bone artefact came from Layer 4. It resembles bone link shafts commonly found in the southern parts of the Western Cape (e.g. J. Deacon 1992; Orton & Halkett 2007; Kyriacou & Sealy 2009) but is far thinner. It measures 77.91 mm in length, has a maximum thickness of 3.42 mm and its ends are 2.89 mm and 2.43 mm in diameter respectively. Its entire surface is worked. Both tips are slightly darkened but microscopic examination failed to reveal the cause. It does not taper as strongly as published examples of link shafts and its function remains unknown. The closest analogues come from Highlands Rock Shelter in the Karoo-Cape Midlands: aside from several bone ‘rods’ that are not described further, one bone artefact “shows two square-cut and polished ends but is slightly bowed” (H. Deacon 1976: 135), while another broken one is described as tapering “from a maximum diameter of 4.6 mm to 3.2 mm at the square-cut end” (H. Deacon 1976: 134). The latter is also covered with incisions, suggesting that it represents a counting record. Ours is plain.

Layer 5 revealed five organic artefacts, all from the main bedding unit (excavation Level 11). One, made of wood, is what is often termed a ‘peg’ and is considered to have been used either for stretching skins or for hanging items on the cave walls (Hewitt 1931; Parkington & Poggenpoel 1971; H. Deacon 1976). The Reception Shelter example is 106 mm long and, where the sides are parallel, it measures 29 mm and 15 mm in width. A well-polished bone awl was made from the right radius of a wild cat (*Felis libyca*) with the proximal end unworked. Two pieces of string, both tied in loops, seem to be made of grass but with fibres of different thicknesses. No braiding occurs—the fibres simply run parallel to one another. Although not easily measured, the loops, if pulled taught, would be between 50 mm and 90 mm long. Similar unbraided string was found at Diepkloof Rock Shelter 17 km south-east of Elands Bay (Parkington 1976).

### *Historical artefacts*

Historical material indicating contact with European settlers was found only in Layers 1 and 3. A bone button with four holes and a slightly recessed centre came from Layer 1. The remaining historical material all came from Layer 3. These included a small fragment of mirror 1.45 mm thick, a whole but used matchstick measuring 49 mm by 2.40 mm by 2.60 mm, three conjoining pieces of a metal band of the sort commonly used to hold barrels together, two conjoining fragments of wire and a small, heavily rusted adze/axe head approximately 76 mm long.

### *Ostrich eggshell fragments*

Although ostrich eggshells (OES) were undoubtedly used for other purposes as well, the contents were almost certainly eaten. OES was ubiquitous throughout both TU1 (1.51 kg) and TU2 (3.88 kg). Despite the good preservation of the OES (even the inner skin was still preserved on fragments as deep as the base of Layer 6 in TU1), large numbers exhibited external surface exfoliation. This might be due to the effects of heat. This exfoliation was common in TU1 but in TU2 it was common only at the surface, dropping off further down. In TU1 the incidence of burnt OES never exceeded 28.8 % while this feature was not recorded in TU2 due to the high number of fragments in the lower levels that were heavily encrusted with what seems to be a calcium carbonate precipitate. An interesting pattern to emerge among the OES fragments was the changing mean weight per fragment. In TU1 there was a very marked decrease in weight from more than 1.25 g in Layer 6 to less than 0.75 g in Layer 5 (Fig. 14). This change is accompanied by an increase in the frequency of other artefacts and is presumed to indicate increased occupation intensity in the upper levels and thus more trampling. Evidence for bead manufacturing, which leads to the presence of very small fragments (Orton 2008b), is entirely absent. Interestingly, the reverse trend is seen in TU2 where the lowermost levels have the smallest fragments (Fig. 15) and the most stone artefacts.

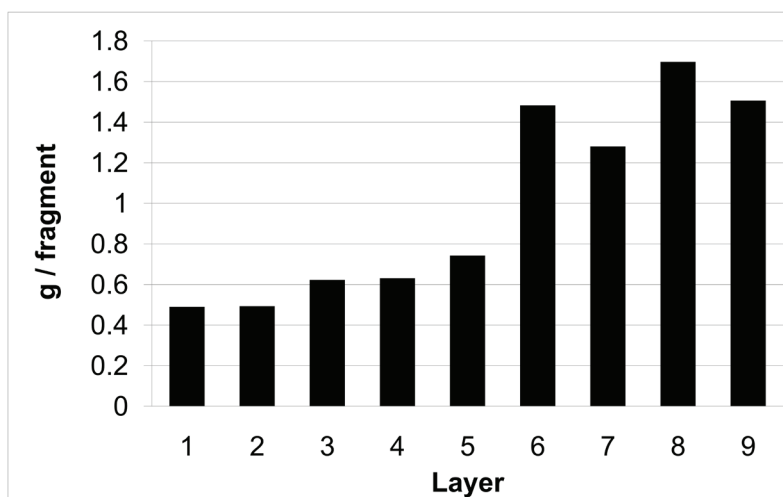


Fig. 14. Mean weight of individual OES fragments from Reception Shelter TU1.

### *Fauna*

The Reception Shelter faunal assemblage is numerically dominated by snake and tortoise remains (Table 5). Small bovid remains are also common, and those that could be identified to species are steenbok. Some of these individuals were quite young; one specimen perhaps even comes from a foetal animal. Most notably, caprines (sheep and/or goat) and cattle are present from just above the base of TU1 (excavation level 24). Sheep (*Ovis aries*) are not easy to distinguish from goats (*Capra hircus*) in the absence of horn cores, but sheep are much more common in the archaeological and historic record of the Western Cape. However, historic accounts indicate that

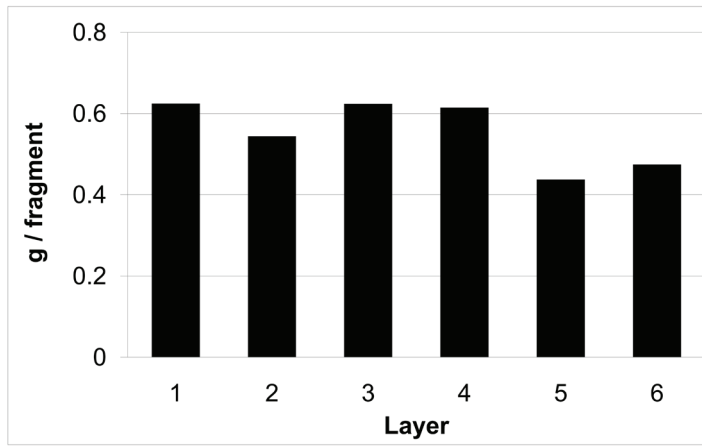


Fig. 15. Mean weight of individual OES fragments from Reception Shelter TU2.

while the Cape Khoekhoen did not herd goats, the Namaqua from further north did (Schapera & Farrington 1933). Domestic stock, along with pottery, confirms that the vast majority of the TU1 sequence accumulated within the last 2 000 years. Other bovids include grey duiker and possibly hartebeest and klipspringer. Canid bones were found throughout TU1 and at the top of TU2. These bones may represent either domesticated dogs or jackals, and the distinction will require extraction of DNA from the bones. Small cats are also common in the assemblage, and one radius was shaped into an awl. We identified one bone as leopard, but it might alternatively have come from a large caracal. Caracals still frequent the area today (P. Visser pers. comm. 2009), and although leopards are now confined to the Kamiesberg Mountains, they surely occurred nearby in the past. One remarkable find from TU1 Layer 5 (level 10) was the lower canine of a lion; no human modifications were apparent. Mole rats, porcupines, hares, and hyrax round out the mammals. Only one equid and two snake remains were found in TU3. Only one small cat bone from the historic material at the top preserved a cut mark and one small bovid bone (from TU1 Layer 6, level 15A) was chewed by a carnivore. A few bird bones, likely from francolins (*Francolinus capensis*) and barn owls (*Tyto alba*), and small fish vertebrae are also in the assemblage. The tortoise humeri from historic and late Holocene levels of TU1 are small, but the variety of species present needs to be investigated further.

### Snails

Many land snails (*Trigonephrus globulus*) were found throughout the sequence in both TU1 and TU2 but displayed marked concentrations in certain levels. Low-density ‘middens’ of land snails occur on open sites in the area, but none have been studied. Their age thus remains unknown, although they appear to be associated with both MSA and LSA artefacts on different sites. The current landscape is almost devoid of bushes outside of the river channels but elsewhere in Namaqualand one does find concentrations of dead snails beneath bushes where they had no doubt sought shade. In TU1 the main LSA occupation layer (Layer 5) contains much stone and OES but virtually no snail. By contrast, snails are superabundant in Layer 8, which

TABLE 5  
Reception Shelter faunal analysis. (Figures indicate Number of Identified Specimens (NISP)/Minimum Number of Individuals (MNI). \* count of humeri.)

Linnaean names	Vernacular names	TU1 layers								TU2 layers			
		1-3	4	5	6	7	8	9	1	2	3	4-6	
Leporidae gen. et sp. Indet.	hare	1/1	1/1				3/1	4/1		1/1	1/1		
<i>Bathorygus suillus</i>	dune molerat	2/1		1/1					1/1				
<i>Hystrix africaeaustralis</i>	porcupine								2/1				
<i>Canis</i> sp.	dog/jackal	3/1				1/1		1/1	2/1				
<i>Felis libyca</i>	small/wild cat	3/1	2/1	5/1			3/1	2/1	3/1	1/1	3/1	1/1	
	indet. small carnivore								2/1				
<i>Panthera pardus/Canual carnal</i>	leopard/caracal			1/1									
<i>Panthera leo</i>	lion			1/1									
<i>Proavia capensis</i>	rock hyrax	1/1		8/1		2/1	3/1						
Alcelaphini (cf. <i>Alcelaphus buselaphus</i> )	?red hartebeest	1/1											
<i>Raphicerns campestris</i>	steenbok			3/2									
<i>Raphicerns</i> sp.(p.)	grysbok/steenbok	1/1	2/1	4/2	1/1		1/1	1/1					
<i>Sylvicapra grimmia</i>	grey duiker			1/1			1/1			2/1			
? <i>Oreotragus oreotragus</i>	?klipspringer						1/1						
Caprini gen. et sp. Indet.	sheep/goat							1/1					
<i>Bos Taurus</i>	cattle						1/1	1/1					
	small bovid	7/1	9/1	32/2	9/1	4/1	13/1	12/1	13/1		5/1	1/1	
	small-medium bovid	3/1		3/1			4/1	9/1	6/1	4/2	2/1		
	medium-large bovid	2/1					7/1	8/1					
	large bovid	1/1		1/1			12/1	9/1	1/1				
	snake	115/-	166/-	640/-	27/-	5/-	76/-	73/-	204/-	16/-	21/-	12/-	
	tortoise*	7/-	5/-	20/-	1/-		17/-	16/-	14/-	1/-	2/-		
	bird	1/1		2/1			6/2	2/2					
	fish						8/-	4/-				1/-	



has relatively little occupation debris. This prompts the interpretation that the snails were not accumulated by people. Altogether 1.78 kg of snail shell was found in TU1. In TU2, snails, stone artefacts and OES fragments all peak in different levels, also suggesting natural accumulation of the snails. There we recovered a massive 6.17 kg of snail, but, despite our efforts to clean them, several snails no doubt retained some sediment.

#### BUZZ SHELTER

##### *Stone artefacts*

For convenience, the younger deposits from TU2 inside the shelter are discussed before those from TU1, TU4 and TU5, which are reported together. TU3 produced very few finds and these are only discussed when meaningful. Both of the main excavation areas yielded large stone assemblages, 1 658 and 1 742 pieces respectively, with quartz again strongly dominant (Table 6, Figs 16 & 17). As occurred in the Reception Shelter outside assemblage, quartz increases in dominance towards the base.

Again, the historical Layer 1 in TU2 seems deprived in terms of lithic content. Only one crystal quartz backed tool appears here, in Layer 2. Retouched items are generally rare in Layers 1 to 3 and still uncommon below this. Scrapers are marginally more common than backed elements in the older suite of layers and, coupled with the fact that no backed scrapers are present, this supports a late mid-Holocene age. The only other potential temporal marker is the quartz circular scraper in Layer 7 (Fig. 18D). At Elands Bay Cave circular scrapers occur in the third millennium BC (Orton 2006). The double-backed bladelet from Layer 6 is not clear and could be a backed scraper or a borer (Fig. 18G), types more often expected in assemblages predating about 2 500 BP. The large quartzite side scraper (Layer 4) is an older flake that was reused and broke, perhaps during the later retouch, while a grey-green silcrete edge-damaged flake (Layer 2) also appears, from its reddish patina, to be an older, reused flake.

In TU1, TU4 and TU5 (Table 6) we see a similar retouched tool distribution to the lower layers of TU2, again with no backed scrapers, suggesting that much of this undated deposit may stem from the same general period of occupation as in TU2. Rare inclusions in any assemblage are artefacts with mastic adhering. The CCS backed point from Layer 4 shows signs of what may be both mastic and ochre adhering to the backed edge. Recent research has shown that ochre was likely deliberately included as a constituent in mastic during the MSA (Gibson et al. 2004; Wadley et al. 2009) but the LSA mastic object from Steenbokfontein Cave south of Lambert's Bay seems not to have included ochre, despite the presence of surficial ochre traces related to its handling (Jerardino 2001). This object is interpreted to represent a store of mastic from which small amounts were removed as needed. A second available artefact with ochre-stained mastic traces was initially reported by Hewitt (1912) and subsequently re-examined by H. Deacon (1966) and Lombard (2007). Its surface ochre traces are also interpreted to be from handling.

Non-flaked stone artefacts were again rare. In TU2, an upper grindstone comes from Layer 4, a grindstone fragment from Layer 6 and a hammer stone from Layer 7. The first is calcrete and the other two are of unknown materials. Although technically an upper grindstone, the calcrete artefact resembles those described by Webley (2005) as *//khom* stones used for scraping fat off animal skins (Fig. 19). With these artefacts



TABLE 6  
Buzz Shelter stone artefacts. (\* denotes one crystal quartz retouched item.)

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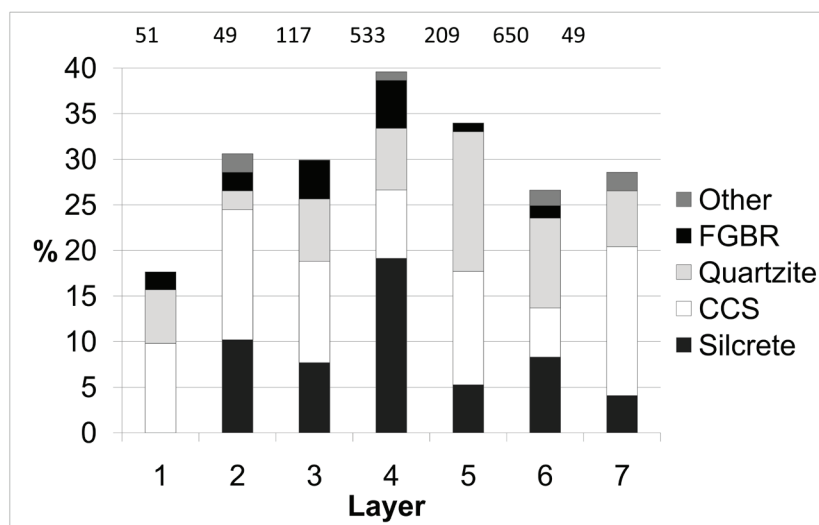


Fig. 16. Stone materials in Buzz Shelter TU2. Quartz is excluded and comprises the remaining amount in each layer. Number of artefacts per layer is indicated along the upper margin.

it was the texture rather than the working-edge morphology that mattered. The grain should be coarse enough to scrape the skin without tearing it and the stone should release fine sand grains without crumbling and be comfortable to hold in the hand (Webley 2005). Being of calcrete and about 80 mm by 80 mm by 25 mm, the example from Buzz Shelter meets these requirements. Raised parts of the working surface were rubbed smooth and some areas displayed a greasy residue. From TU1 Layer 1 came a quartzite hammer stone and an upper grindstone and upper grindstone/hammer stone, both in unknown materials. Although distributed thinly

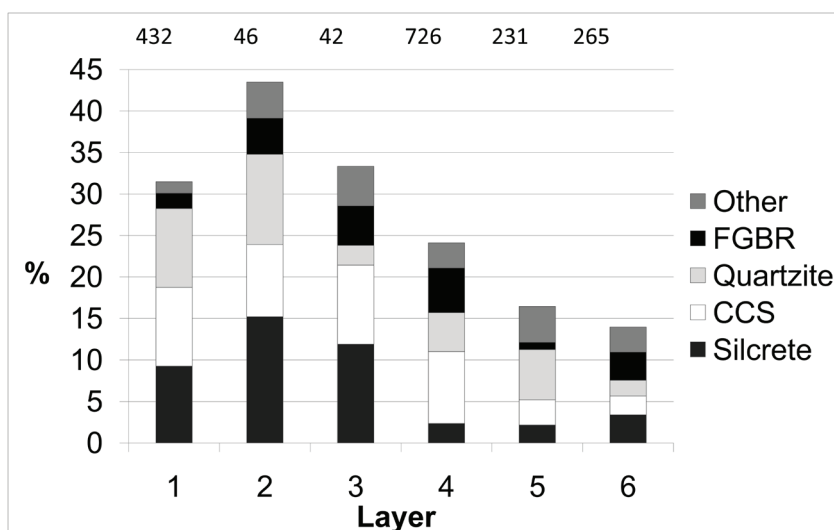


Fig. 17. Stone materials in Buzz Shelter TU1, TU4 and TU5. Quartz is excluded and comprises the remaining amount in each layer. Number of artefacts per layer is indicated along the upper margin.

through all the test units, ochre fragments were most common in Layers 3, 4 and 6 of TU2. The base of Layer 3 (excavation level 5) included a thin stringer of ochre that must have been sprinkled onto the ground for some purpose. It might even have lined an unrecognised pit.

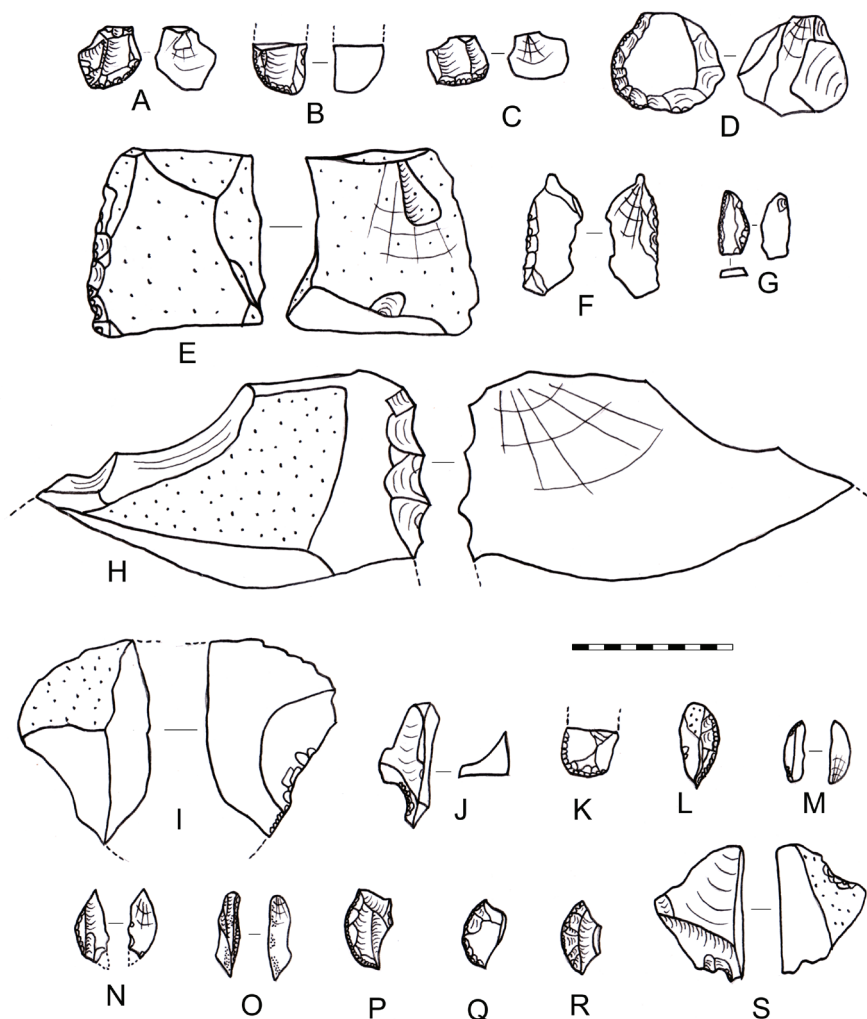


Fig. 18. Stone artefacts from Buzz Shelter. Scale bar = 50 mm. A: silcrete thumbnail scraper (TU2, Level 4), B: silcrete side-end scraper (TU2, Level 5), C: silcrete thumbnail scraper (TU2, Level 6), D: quartz circular scraper (TU2, Level 7), E: quartzite large side scraper (stippling denotes old patina, TU2, Level 4), F: CCS adze (TU2, Level 3), G: CCS double-backed bladelet (TU2, Level 6), H: quartz porphyry MRP (stippling denotes cortex, TU2, Level 2), I: silcrete adze (stippling denotes cortex, TU1, Level 1), J: silcrete notched piece (TU1, Level 1), K: silcrete end scraper (TU1, Level 1), L: CCS side scraper (TU1, Level 2), M: CCS backed bladelet (TU5, Level 4), N: quartz segment (TU1, Level 4), O: CCS backed point (stippling denotes mastic traces which continue on backed edge, TU1, Level 4), P: silcrete side scraper (TU1, Level 4), Q: CCS side scraper (TU1, Level 4), R: CCS side scraper (TU4, Level 4), S: CCS notched piece (stippling denotes cortex, TU1, Level 4).



Fig. 19. Dorsal (left) and ventral surfaces of the //khom stone, Buzz Shelter TU2 Layer 5. Scale bar = 5 cm.

### *Ostrich eggshell beads*

Most beads at Buzz Shelter came from TU2. On average the beads are far smaller even than those from TU2 of Reception Shelter, although the mean values for the Layer 3 external and aperture diameters are slightly inflated by the single large bead (6.5 mm diameter) in the sample (Fig. 20). No patterning is evident in the Layers 4 to 7 mean external diameters (all of which incorporate five or more beads), which strongly clustered between 4.10 mm and 4.42 mm. In the other excavation area all but one bead came from TU1. Here the far smaller sample displays a similar pattern but with the beads from deeper down being slightly smaller on average (Fig. 21). Almost all

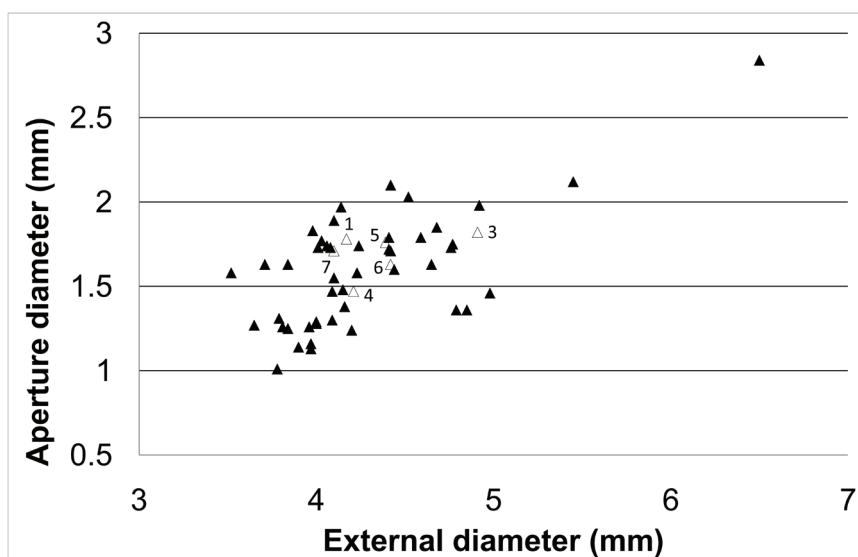


Fig. 20. Ostrich eggshell bead dimensions from Buzz Shelter TU2. Solid triangles represent individual beads. Open numbered triangles indicate mean values per layer. Layer 3 has three beads, Layer 1 has four and the rest have five or more.

the beads are well worn as indicated by the low mean thickness values of  $1.53 \pm 0.17$  mm and  $1.58 \pm 0.13$  mm for each excavation area. In TU3 two beads with external diameters of 4.22 mm and 4.50 mm were found.

Manufacturing fragments occur in Layers 1 and 4 of the TU1, 4 and 5 area, but in TU2 they were scarce in all but Layer 7. Twelve are present in TU2, all in Stages IIIa and IIIb. The other excavation produced ten fragments spread between Stages IIIa, IIIb, IVb and Vb. The variety in stages and the fact that 13 of the 22 fragments are broken, supports the conclusion that some manufacturing actually took place at the site.

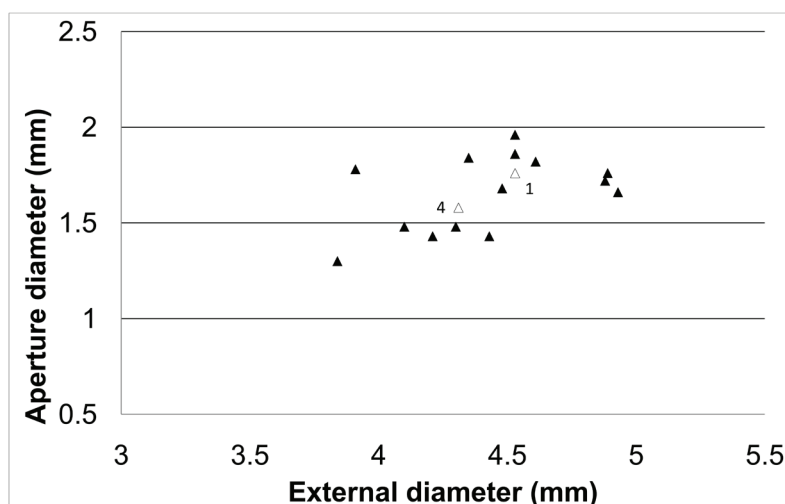


Fig. 21. Ostrich eggshell bead dimensions from Buzz Shelter TU1, TU4 and TU5. Solid triangles represent individual beads. Open numbered triangles indicate mean values for Levels 1 and 4, each of which has six beads.

### Pottery

No pottery was found in any of the excavations at this site.

### Marine shell

Marine shell was scarce in Buzz Shelter, with only three fragments weighing less than one gram coming from TU2 (Layers 1, 3 and 4). All are *Choromytilus meridionalis*. At the front of the cave, in TU1, we found a single white mussel (*Donax serra*) fragment of 1.3 g and a small, waterworn whelk, both on the surface (Layer 1). The whelk had a fresh break alongside its opening and its tip was worn off but there was no obvious sign of threading. Similar shells are frequently found on coastal sites where they were sometimes threaded or at least used for decorative purposes (Orton 2007; Dewar 2008). No marine shell fragments came from TU3 but a pendant made from a turban shell (*Turbo sarmaticus*) was found. Unfortunately, with the stratigraphic difficulties explained above, its associations remain unknown but it appears to lie within the youngest suite of deposits at the rear of the cave. It is triangular, 25.28 mm by 13.63 mm in dimension, and has two perforations of 1.84 mm and 1.71 mm diameter. No decorative markings occur.

### *Organic artefacts*

In TU2 many wood shavings and at least three pieces of worked wood were found in the upper two layers. Of the latter, one is a thin stick, smoothed on the sides and worked to a blunt tip, while another resembles a matchstick and is 2.23 mm by 2.75 mm thick. Layer 4 produced three pieces of string or rope and three fragments of knotted netting (Fig. 22). The string was 2.50 mm by 1.50 mm in dimension with lengths of approximately 40, 60 and 70 mm, all undoubtedly from the same original piece and made from three strands braided together. The netting was constructed from a thinner string made from two strands twisted together. Although the netting was very delicate and difficult to open out without breaking, we estimate its mesh size to be just less than 4 mm. Several cut sections of the reed *Phragmites australis* were also found.

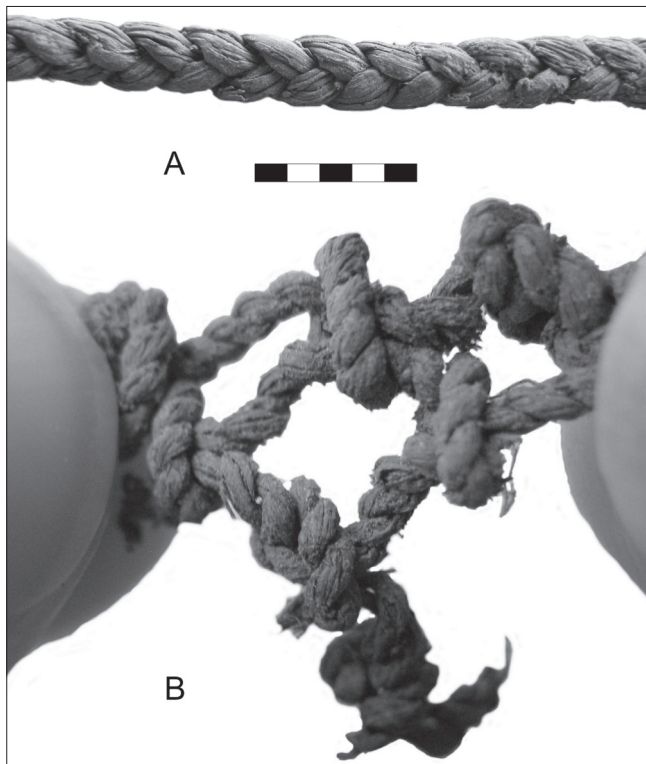


Fig. 22. String and netting fragments from Buzz Shelter. A – three-stranded, plaited string; B – netting made from two-stranded twisted string. Scale bar = 5 mm.

In Layer 5 a small, hard, slightly sticky resinous lump was found. It was impenetrable with a cold pin, but when heated the pin did go in a little way, suggesting that the object is mastic. The only bone artefact recovered from TU2 was from Layer 6. It is made on a large shaft fragment and has a rounded and smoothed end. It is blackened, presumably through burning, since it was found in an ashy layer (Fig. 23). The artefact is not unique. Parkinson and Poggenpoel (1971: 13) found a ‘bone scraper’ at De Hangen Shelter north of Clanwilliam in the Cederberg, describing it as “a short length of long bone shaft split in half and then polished at one end rather like an apple-corer”.



H. Deacon (1976) describes a similar artefact from Highlands Rock Shelter, assuming it to be some sort of knife. Either function seems plausible. In TU4 two worked bone fragments were found in Layer 4. One is a small shaft with two series of small incisions along opposite edges and an area that has been ground and smoothed, while the other is a small fragment with irregular incisions on one broken edge (Fig. 23). The former is perhaps similar to H. Deacon's (1976) 'counting record' (described above) since its incisions are also very regular. Unfortunately, both ends are broken.



Fig. 23. Bone artefacts from Buzz Shelter: A – notched bones from TU4, level 4; B – spatulate-type artefact from TU2, Layer 6. Scale bars = 25 mm.

#### *Historical artefacts*

Three historical items were found. The first two are matchsticks from Layer 1 but both were from well beneath the surface. One is 2.10 mm by 2.20 mm in diameter and the other 2.30 mm by 2.70 mm. Both are burnt such that their lengths cannot be ascertained. An approximately 0.5 cm<sup>2</sup> fragment of blue fabric was found in Layer 2. Close examination of its texture suggests it might be wool.

#### *Ostrich eggshell fragments*

OES fragments again occurred throughout. In TU2 about 1.35 kg were spread throughout the deposits, while in the drip-line excavations 1.60 kg were recovered, with nearly one third being concentrated in Layer 1 as a result of the erosion. The TU2 fragments are largely free of surface damage and their mean weights are fairly consistent, though Layers 1, 2 and 7 are slightly elevated (Fig. 24). While in the upper levels these values may be due to less post-depositional fragmentation, the Layer 7 increase is due to encrustation connected to the burnt ash. In the drip-line

excavation most unburnt fragments displayed minor damage, probably due to heat, and the uppermost and lowermost layers also showed slightly elevated mean weights per fragment (Fig. 25). The elevated value for Layer 6 is certainly due to the heavy encrustation, which also prevented determination of burning.

#### *Fauna*

Similar to Reception Shelter, the current sample of Buzz Shelter fauna is dominated by smaller species, including steenbok, snakes, and tortoises (Table 7).

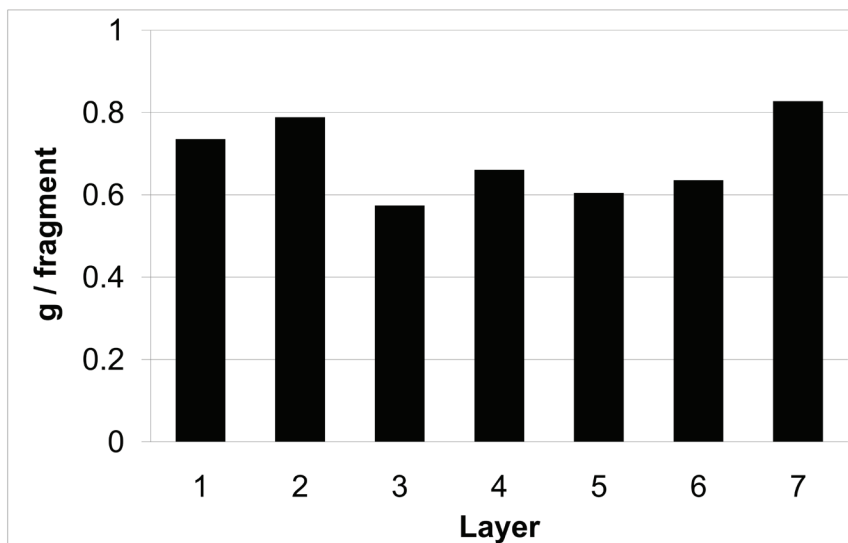


Fig. 24. Mean weight of individual OES fragments from Buzz Shelter TU2.

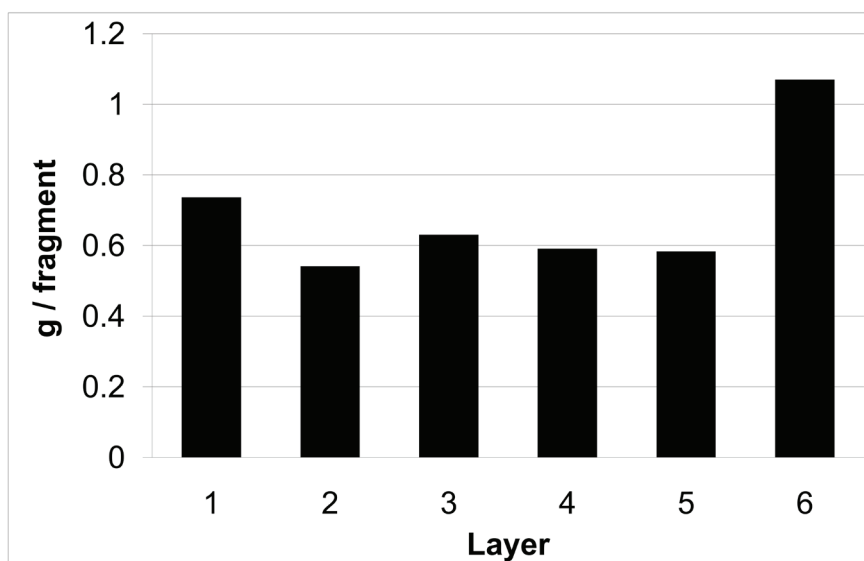


Fig. 25. Mean weight of individual OES fragments from Buzz Shelter TU1, TU4 and TU5.

TABLE 7  
Buzz Shelter faunal analysis. (Figures indicate Number of Identified Specimens (NISP)/Minimum Number of Individuals (MNI).  
Sf = surface; \* count of humeri.)

Linnaean Names	Vernacular Names	TU2 layers							TU3 layers			TU1 layers			Sf
		1-2	3	4	5	6	7		1	2	3	1-3	4	5-6	
Leporidae gen. et sp. Indet.	hare/ rabbit	1/1	3/1	9/1	7/1				1/1	3/1	1/1		1/1	1/1	
<i>Bathyergus suillus</i>	dune mole rat	4/1		4/2					1/1	1/1	1/1		2/1		
<i>Hystrix africaeaustralis</i>	porcupine	2/1	1/1												
<i>Canis</i> sp.	dog/jackal	3/1		1/1					1/1						
<i>Felis tilyca</i>	small/wild cat	3/1				1/1			1/1	2/1					
<i>Canis caracal</i>	caracal											2/1			
<i>Procavia capensis</i>	rock hyrax	2/1		3/1		1/1				2/1					
Alcelaphini cf. <i>Alcelaphous buselaphus</i>	?red hartebeest														2/1
<i>Raphicerus campestris</i>	steenbok									1/1					
<i>Raphicerus</i> sp(p.)	grysbok/steenbok	2/1		4/1	1/1					3/1			1/1		
	small bovid	12/1	2/1	16/1	3/1	4/1			3/1	13/2	4/1	1/1	5/1	1/1	
	small-medium bovid	6/1	1/1	7/1					1/1	4/1	1/1	4/1	3/1	1/1	
	Medium-large bovid			1/1					1/1	2/1					2/1
	large bovid	5/1		3/1						2/1	1/1		3/1	3/1	1/1
	snake	96/-	10/-	38/-	1/-	7/-	2/-		34/-	84/-	13/-	4/-	7/-	1/-	
	tortoise*	22/-	4/-	15/-	2/-	5/-			1/-		1/-	7/-	6/-	1/-	
	bird								1/1		1/1			5/-	
	fish		1/-	17/-		1/-					2/-				

Hares, small-medium and large bovids are also common. Hyrax, mole rat, porcupine, wild cat, caracal and canids round out the list with small numbers. Two alcelaphine teeth were found on the surface, but none were found *in situ*, although a few post-cranial bones from medium-large (alcelaphine-sized) bovids were present in the sequence. As at Reception Shelter, these alcelaphine teeth are likely from hartebeest, not wildebeest (*Connochaetes* sp.), based on the absence of wildebeest in the region historically. Some of the small-medium bovid and large bovid bones could be from domesticated caprines (sheep and/or goat) and cattle respectively, but no clearly diagnostic pieces were found. However, most of the TU2 sequence antedates the introduction of domesticates into the region and pottery is absent. A small number of bird (likely francolin) and fish bones were also present. Two large bovid bones from TU1/4/5 Layer 4 showed cut marks. No bone from Buzz Shelter was chewed by carnivores but a few bones were gnawed by porcupines, which is expected given the evidence of porcupine activity on the modern surface. Tortoises are found throughout the sequence. The LSA specimens are similar in size to the pastoralist specimens found in Reception Shelter and other LSA sites. However, the tortoises from the historic levels at Buzz Shelter are significantly larger than the tortoises from the historic levels at Reception Shelter. We are currently investigating possible explanations for this difference, including differences in species composition between the two samples.

### *Snails*

Only very small quantities of land snail were present throughout both excavation areas at Buzz Shelter. In Layers 1 and 2 of TU2 snails are more common relative to flaked stone and OES fragments, but from Layer 3 their importance decreases until in Layer 7 they are very rare. It is difficult to know what to make of this patterning given the very small weights recovered (297 g in TU2) but this could be a result of preservation or it might reflect a dietary change in which snails became more popular. The trend does not match Reception Shelter. No particular pattern is evident in the drip-line excavation, where snails are far less important at the top and bottom but slightly more important in Layers 3 and 4. This might reflect poor integrity of the deposits but, again, the pattern may have been affected by the low total weight of snail shell recovered (240 g).

## DISCUSSION

With no previous archaeological research having been conducted in the area we lack proximate comparative material but it is evident that these sites follow a similar pattern to that commonly encountered in rock shelters in the vicinity of Elands Bay and in the Cederberg Mountains, some 90 km to the south and south-east. There the phrase ‘bedding and ash’ is used to describe deposits in which a central ashy feature is surrounded by bedding material, the latter rich in finds. De Hangen, the first described thus, is perhaps the most typical (Parkington & Poggenpoel 1971; Parkington 1976), although more than 100 bedding and ash accumulations are on record (e.g. Klein Kliphuis (Van Rijssen 1992; Orton & Mackay 2008), Andriesgrond (Anderson 1991), Renbaan (Kaplan 1987), Diepkloof (Parkington 1976; Parkington & Poggenpoel 1987); Klipfonteinrand (Nackerdien 1989), Faraoskop (Manhire 1993)).

These sites are all well to the south of the Knersvlakte, focused on the northern Cederberg and adjacent Sandveld. Although insufficient area was removed from Reception Shelter to confirm fully that it matches the bedding and ash model, the remains from Buzz Shelter seem clearer. Some of the finds from these Knersvlakte sites merit further discussion and are addressed by category below.

### *Stone artefacts*

The majority of retouched artefacts found both inside and outside Reception Shelter are backed tools made on crystal quartz. This strongly supports a connection with recent sites from further north along the Namaqualand coastline where such assemblages date to within the last 2 100 years (Orton et al. 2005; Dewar 2008). The origin of these assemblages remains unknown, but it is quite clear that they differ markedly from the other kinds of assemblages commonly encountered in the region. Given their reported age, it is tempting to associate them with the introduction of sheep and pottery to the region. Although the dating on the Reception Shelter talus slope is insufficient to determine the full temporal range through which such tools are found, those from inside the cave all date within the second millennium AD. Assemblages with such artefacts from single-occupation open sites are invariably almost 100 % crystal, but in the present cave setting it is clear that the crystal quartz backed industry only had a minor influence on assemblage composition in terms of both materials and typology.

The vein quartz triangle from outside Reception Shelter is a rare find. Records of such artefacts are few and far between with sites as spatially disparate as Jakkalsberg L and Jakkalsberg N along the Orange River, and Delta and Die Kelders east and southeast of Cape Town having the only other known South African examples (Schweitzer 1979: fig. 43 f & g; Orton & Halkett 2010; Orton personal observation). Those from Die Kelders were not reported as triangles but probably fall within that class (Orton & Halkett 2010).

### *Ostrich eggshell beads*

The ostrich eggshell bead assemblage is perhaps the most remarkable aspect to the collection. The relationship between bead size and ethnicity has long been debated following Jacobson's (1987) suggestion that bead diameters greater than 7.50 mm indicated a Khoekhoen presence and the subsequent publication of a seminal paper by Andrew Smith and colleagues (1991). In that paper, based on sites from the Vredenburg Peninsula and adjacent hinterland, the authors claimed that small beads (<5.5 mm external diameter) were made by hunter-gatherers, while larger beads originated among pastoralist groups. Prevailing thought then suggested that pastoralist groups migrated into southern Africa some 2 000 years ago, bringing with them a new cultural package including domestic stock, pottery and large beads (Ehret 1982; A. Smith 1983, 1992; Walker 1983; Parkington 1984; Elphick 1985; Parkington et al. 1986; Barnard 1992; Boonzaier et al. 1996). While the two cultural traditions co-existed side by side, it was thought that in recent sites "the large beads are indicators of an acceptance of cultural material or norms of manufacture from the herder communities, and the insignificant numbers of small beads in the herder assemblages would suggest that this tended to be a one-way exchange" (Smith et al. 1991: 89). Mean sizes were seen to increase with time as herders became more entrenched on the landscape.

Since the middle 1990s a new school of thought has emerged. Initiated by Kinahan (1995) and subsequently carried forward by Sadr (1998, 2003, 2004, 2005), the new thinking has suggested that indigenous adoption of pastoralism might have been possible via diffusion of goods. Sadr (2003: 196) introduced the term ‘hunters-with-sheep’ to distinguish what he saw as the more common mode of sheep-keeping from “brief, localized episodes of more intensive animal husbandry”. The position of Namaqualand’s ostrich eggshell beads in this debate has yet to be studied further, although one of us (J.O.) is currently engaging with this topic. Preliminary observations suggest that medium-sized beads (5–6 mm external diameter) dominate the recent archaeology of Namaqualand (Orton 2008b), making a division between 5 mm and 6 mm inappropriate. The implication is that there is a stronger continuum between larger beads and smaller beads than previously thought, meaning that beads are not necessarily useful for identifying ethnic groups. This argument seems particularly strong at both Reception Shelter and Buzz Shelter, both of which have quite small beads, even in the youngest layers. Earlier, Jacobson (1987) suggested using the presence of beads greater than 7.50 mm maximum dimension to indicate Khoekhoen presence. At Reception Shelter the largest excavated bead was 7.29 mm, with two slightly larger beads (7.33 and 7.65 mm) found on the talus slope. At Buzz Shelter the two largest beads are 6.50 and 5.45 mm. Following Jacobson (1987) and given the generally small beads present, it seems unlikely that they were left by Khoekhoen people.

#### *Marine shell*

Isolated marine shells are regularly found on inland sites in western South Africa, having been well documented in the Cederberg (Parkington & Poggenpoel 1971; Halkett 1987; Kaplan 1987; Nackerdien 1989; Anderson 1991) and Richtersveld areas (e.g. Webley et al. 1993; Orton & Halkett 2010). Being only 43 km from the coast, the shells found in the Varsche Rivier sites are unsurprising. Perhaps unexpected, though, is the pendant found in Buzz Shelter. *Turbo sarmaticus* is a shell species commonly found in the warmer waters off the south coast of South Africa; its range is variably described as extending eastwards from False Bay or Table Bay (Kennelly 1964; Kilburn & Rippey 1982; Steyn & Lussi 1998; Branch et al. 2005). Pendants made of this shell are common along the south coast (e.g. Schweitzer & Wilson 1982; Inskeep 1987; Orton & Halkett 2007) but far less so north of Cape Town where they are reported from Renbaan in the Cederberg (Kaplan 1987) and from Tortoise Cave (Robey 1987). This suggests long-distance transport of the Buzz Shelter pendant, in one way or another, over a minimum distance of 200 km. The most surprising example of marine shell inland comes from Bethelsklip in Namaqualand where Webley (1984) recovered a pendant made from *Haliotis midae*. This species only occurs south of St Helena Bay (Steyn & Lussi 1998) and has thus been transported at least 280 km from its natural range.

#### *Organic artefacts*

Wood shavings are commonly reported from late Holocene bedding and ash sites and are invariably found in tandem with stone adzes (e.g. Parkington & Poggenpoel 1971; Manhire 1993; Orton & Mackay 2008) thought to have been woodworking

tools (Mazel & Parkington 1981; Mitchell 2002). All three items are present in Buzz Shelter, suggesting active woodworking at the site.

Fragments of string and netting are common in late Holocene archaeological deposits (Grobbelaar & Goodwin 1952; Parkington & Poggenpoel 1971, 1987; H. Deacon 1976; Anderson 1991). Two-stranded string dominates, but three-stranded examples come from Diepkloof (Parkington & Poggenpoel 1987: fig. 4) and Andriesgrond (Anderson 1991). With a mesh size of approximately 10 mm recorded at Melkhoutboom, H. Deacon (1976) suggested that nets might have been used for carrying plant foods such as small corms and bulbs, a food item found in abundance at Buzz Shelter where a similar use with an even smaller mesh seems plausible.

### *Historical artefacts*

Unfortunately, little that helps date or interpret the historical deposits was found. The mirror fragment is too small to be of use, but Kolben (1738) noted that the 'Hottentots' were most fond of fastening fragments of mirrors in their hair. Whether this tiny fragment thus points towards a historical Khoekhoe occupation or not cannot be said for certain. The only real clue we have is the bone button in Reception Shelter. According to Peacock (1978: fig. 13), it is a nineteenth-century British-turned bone button. This then dates the uppermost levels of the site to about that time.

Penn's (1987, 1995) extensive reviews of the Northern Cape frontier show that little was happening in the area in the 1700s, with the frontier essentially advancing from the Olifants River northwards and north-eastwards into the Kammiesberg Mountains and Bokkeveld respectively, and omitting the unforgiving Knersvlakte. It was only much later that the drier parts of Namaqualand were settled. A nearby farmstead has been in ruin for at least 60 years and thus far we have not been able to trace any information of its historical occupation, but it seems likely that the most recent occupants of the shelters were in some way associated with the farm owners. The farm was formally granted in 1843 with the survey diagram showing roads but unfortunately no buildings (Chief Surveyor General n.d.).

### *Fauna*

Overall, the animal species identified in the Reception and Buzz Shelters are consistent with those found in the area in the recent past. Among the bovids, steenbok are most common, but grey duiker, klipspringer and likely hartebeest are also present. Domesticated cattle and caprines (sheep and/or goat) were found in Reception Shelter in TU1 Layer 9 (excavation level 24). The level just below provided a calibrated radiocarbon date of 793–416 BC, which is older than the oldest previously dated domesticates from the region. We are now working on directly dating the Reception Shelter domesticates to assess their antiquity. A diversity of carnivores is found in the deposits. Many are canids which could be domesticated dogs or jackals; analysis of any DNA preserved is the best way to make the distinction. Small cats are common in the assemblages and in the area today. Caracals were also present in the past and today. The most remarkable carnivore find was a lion's canine from TU1 Layer 5. With no other evidence for lion in the deposits, this tooth may have had some symbolic value like the lion carnassial tooth found with an Iron Age human burial at Isamu Pati in Zambia (Fagan 1967). A diversity of smaller animals was also found in the



sites, including tortoises, snakes, hares, hyraxes, birds and occasional fish. Given the infrequency and duration of flows in the Varsche River, we can only assume the fish to originate from the Olifants River 17 km to the south.

### *Botanical remains*

Detailed study of the botanical remains from both sites is still under way and will be presented more fully in due course. As such, no descriptions have been provided above but some general observations are nevertheless possible. Similar species are present in both shelters with many of the commonly eaten species certainly present (Archer 1994). The bedding deposits are of dense grass and include at least two species. Among the grass and also in other layers were numerous fragments of *Iridacea* belonging to the genera *Moraea* and *Ferraria*, both of which are common throughout Namaqualand (Le Roux 2005). These plants are available for collection during spring and summer, but are best late in the flowering season when the corms are at their largest (Liengme 1987). In her review of the occurrence and use of edible plants in Namaqualand, Archer (1994) notes that edible plants are generally available for some four to five months beginning around July to September in the low-lying sandy areas. This thus supports occupation of the shelters at least during the spring and early summer months, a conclusion also reached at other inland shelters in the Western Cape (Parkington 1976). Of special mention are fragments of *Boophane disticha* bulbs that were more commonly found in Buzz Shelter. This poisonous plant has been found in various sites, including Boomplaas Cave, Cango Valley, where H. Deacon (1979; H. Deacon et al. 1978) found it lining pits that contained foodstuffs. This may have been to ward off animals that could have dug out the pits and consumed the stored foods. At De Hangen, Parkington and Poggenpoel (1971; Parkington 2006) found several mussel shells wrapped in *Boophane*. The folded wad of *Boophane* recovered from Buzz Shelter had to have been folded while still fresh and green; the leaves would otherwise crack. As far as we can tell, they do not enclose anything. Despite the lack of reeds and marshes along the Varsche River, *Phragmites australis* and *Cyperus textilis* were noted with many worked examples of the former in Buzz Shelter. These were dominated by short cut lengths similar to those found by H. Deacon (1976) at Melkhoutboom.

### CONCLUSION

Excavations at Reception Shelter and Buzz Shelter have provided the kind of window into the late Holocene use of the Varsche River valley that is clearly not available through the study of open sites where delicate organic materials are not preserved. The deposits show that despite the aridity the area was occupied during the mid- and late Holocene. The general lack of open sites in the area and the periods of occupation of the rock shelters may indicate that shelter was a key element to successful utilisation of an otherwise very harsh landscape, although the occupations do not tie in well with the local climatic sequence. Dewar's (2008) review of Namaqualand palaeoclimates suggests a warm arid phase ending around 4200 BP with a cooler and wetter period following until around 1400 BP. The medieval warm epoch then ensued until the onset of the Little Ice Age, which lasted from 650 to 150 BP. Yet Buzz Shelter was occupied during the arid phase and seemingly abandoned before the onset of moister



conditions. The initial Reception Shelter occupation is within the moister period. Although we lack sufficient dates in the upper levels at Reception Shelter, it seems that sporadic occupation continued during the warm epoch. The final period of occupation at both shelters presumably started during the Little Ice Age, perhaps ending when conditions became too harsh and before the arrival of the farm's wind pump.

The presence of domestic stock at what seems to be a very early age is potentially significant in the debate over the route of entry of domesticates into South Africa. The fact that the oldest directly dated sheep bone thus far on record comes from Namaqualand does support that route. The other older specimens are mostly from the south coast and direct archaeological evidence for the central interior route is lacking. Also central to the debate is the mode of entry: diffusion via the Bushmen or migration with the Khoekhoen. In Reception Shelter the TU1 stone artefacts continue through the contact period, although in very small numbers, with no obvious anomalies. This suggests continuity in terms of the shelter's occupants, and, importantly, demonstrates that the prehistoric way of life persisted despite contact with European colonists. Whether the occupants were Khoekhoen or Bushman cannot yet be said but this aspect, too, will be a focus of further investigation. To this end one of us (J.O.) is continuing excavation at these sites.

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